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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,866	07/02/2003	Paula L. Kolek	02-2453	4386

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INTELLECTUAL PROPERTY  
ALCOA TECHNICAL CENTER, BUILDING C  
100 TECHNICAL DRIVE  
ALCOA CENTER, PA 15069-0001

EXAMINER

TRAN, LEN

ART UNIT PAPER NUMBER

1725

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4

**Office Action Summary**

Application No.

10/612,866

Applicant(s)

KOLEK ET AL.

Examiner

Len Tran

Art Unit

1725

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/9/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-24 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-16,19-22, 29 is/are rejected.
- 7) ☒ Claim(s) 17,18,23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3-8, 12-16, and 29 are rejected under 35 U.S.C. 103(a)) as being anticipated by JP 402037954.

As to claims 1 and 29, JP '954 discloses contacting the molten aluminum with a humidified atmosphere and solidifying the molten aluminum alloy (abstract).

JP '954 lacks the mentioning of the humidified atmosphere having a higher moisture than the surrounding ambient atmosphere.

However, it is obvious to interpret that JP '954 is teaching the humidified atmosphere having a higher moisture content, since JP '954 disclose a moisture content in the pressurized gas. If the moisture content is the same as the ambient, then there is no need for JP '954 to mention the term, "moisture", but just to mention introducing of ambient air. Thus, the pressurized gas used in JP '954 has higher moisture content than the ambient.

As to claim 3, the molten aluminum alloy is subjected to humidified gas.

As to claim 4, the gas is air.

As to claim 5, aluminum is solidified by casting.

As to claim 6, the casting method is low pressure casting.

As to claims 7, 8, and 12-16, JP '954 discloses the method of casting aluminum with a humidified atmosphere.

JP '954 fails to teach the casting temperature, magnesium concentration aluminum type, and further working on the solidified product.

Casting with any type of aluminum alloy would have been obvious, since JP '954 discloses the method of casting with aluminum alloy.

Furthermore, the casting temperature would have been obvious, since it is always above the solidus temperature of the alloy. Therefore, choosing a range above the solidus temperature depends on the design expediency.

As to claim 22, it would have been obvious to having a humidified atmosphere with moisture content above about 0.005 kg/m<sup>3</sup>, since this would depend on surface quality at the end of the casting process.

4. Claims 9-11 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '954 in view of JP 2-274846.

JP '954 discloses the claimed invention above, but fails to teach Mg content and cold rolling.

However, JP '846 discloses using magnesium with content between 0.8-1.5% and followed by cold rolled reduction for the purpose of having good surface quality.

Therefore, it would have been obvious at the time applicant's invention was made to have magnesium content between 0.8-1.5% and cold rolled as taught by JP '846, in JP '954, in order have good surface quality.

#### ***Allowable Subject Matter***

5. Claims 17-18 and 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1, 2-24, and 29 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues on page 8, first paragraph, that JP '954 fails to teach the humidifying of the gas to a predetermined moisture content and substantially maintaining the gas at the predetermined moisture content throughout the casting process, including solidification. Examiner respectfully disagrees. According to the translation of JP '954 submitted by applicant, page 3 discloses a moisture content kept below  $4\text{g/cm}^3$  in order to reduce pinholes as well as assisting the molten metal to rise into the die cavity and then followed by solidification.

As to applicant's argument in page 8, 2<sup>nd</sup> paragraph, that JP '954 fails to teach the die to be pressurized before, during, and after the casting process including the solidification phase is not in commensurate with the scope of the claim, since applicant does not claim to pressurized with humidified gas in the die cavity. Applicant only claims the humidified gas on the surface of the molten aluminum alloy. JP '954 discloses the claimed invention as claimed. Therefore, claims 1, 3-16, 19-22, and 29 are finally rejected.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1725

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (571) 272-1184. The examiner can normally be reached on M-F, 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Len Tran  
Primary Examiner  
Art Unit 1725



December 9, 2006